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REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject matter identified in caption, as amended, pursuant and consistent with 37 C.F.R. § 1.111 and in light of the remarks which follow are respectfully requested.

Claims 1-20 are currently pending in the application and are under consideration.

By the above amendments, claims 1 and 18 to more clearly recite the bonding surface of the sputter target as being substantially flat. Support may be found, at least, in Fig. 2.

Turning to the Official Action, claims 1-13 and 15-19 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Kim (U.S. Patent Application Publication 2005/0082258 A1). This rejection is traversed for the following reasons.

The present invention relates to a method of bonding a sputter target to a backing plate, and more specifically, the use of a backing plate having spaced-apart ridges on the bonding surface of the backing plate.

In accordance with one aspect of the invention, and as set forth in independent claim 1, a method for forming a solder bonded sputter target/backing plate assembly is provided. The method includes (a) forming a backing plate with a bonding surface having a plurality of spaced-apart ridges that are disposed on and within the periphery of the bonding surface of the backing plate; (b) forming a sputter target having a sputtering surface and substantially flat bonding surface; (c) applying a solder material to the interface spaces defined by superimposing the sputter target within the periphery of and onto the plurality of ridges on the backing plate; and (d) allowing the solder

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material to solidify and bond the sputter target to the backing plate so that the plurality of ridges provide an effective uniform thickness solder bonded interface.

Kim pertains to methods of forming particle traps along non-sputtered regions of a physical vapor deposition target construction. See page 1, paragraph 2.

Kim does not disclose each and every feature of the claimed invention. For example, Kim does not disclose forming a backing plate with a bonding surface having a plurality of spaced-apart ridges that are disposed on and within the periphery of the bonding surface of the backing plate as set forth in independent claims 1 and 18. In this regard, the ridges in the present invention act as spacers to ensure a substantially uniform solder thickness.

In stark contrast, Kim states:

The invention encompasses new textures which can be formed on one or more surfaces of a PVD target or target/backing plate assembly, and utilized for trapping sputtered materials which redeposit on the target or assembly. In a particular aspect, curved projections (such as, for example, a bent scroll pattern) are formed on non-sputtered surfaces of a target or target/backing plate assembly to form particle trapping areas. The non-sputtered surfaces can include sidewall surfaces, flange surfaces and/or non-sputtered surfaces along a sputtering face. (Emphasis added.) Page 2, paragraph 31.

Thus, the ridges disclosed in Kim on the non-sputtered surfaces, (i.e., flanges and sidewalls) are manufactured for purposes of trapping particle impurities and are generally disposed on the non-sputtered surfaces. However, Kim does not disclose them as being on the bonding surface of the backing plate. Clearly, the flanges and sidewalls of Kim have a different location and they are formed for a different purpose than in the present invention. Accordingly, withdrawal of this rejection is in order and it is respectfully requested.

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Claims 1-20 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Kachalov et al. (U.S. Patent Application Publication 2005/0011749 A1). The claims, as now presented, cannot be rejected on this basis.

Kachalov et al. relates to sputtering target assemblies and other metal articles as well as methods of making same. Page 1, paragraph 1.

Kachalov et al., like Kim above, does not disclose each and every feature of the present invention. In this regard, Kachalov et al. discloses a method of forming a sputter target assembly having a weld interlocking mechanism, wherein the target and the backing plate have interlocking and mating projections and grooves (at times referred to as interlocking tooth and groove design). See Figs. 1-3. By comparison, in the present invention there are ridges on the bonding surface of the backing plate, which align with a substantially flat non-sputtering surface of the target to provide a uniform solder thickness. Thus, clearly the two processes and the ultimate sputter target/backing assemblies are different. Accordingly, withdrawal of this rejection is in order and respectfully requested.

Claims 14 and 20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kim in view of Hurwitt et al. (U.S. Patent No. 5,879,524). This rejection is traversed.

Kim has been discussed in detail above. Hurwitt et al. pertains to the field of cathode sputtering and more particularly to a target backing plate for use with a sputtering cathode assembly. Col. 1, lines 5-8. Hurwitt et al. has been relied on for the disclosure of a Sn-Pb or Sn-In solder to form a bond between the backing plate and the sputter target. Official Action at page 4. However, Hurwitt et al. does not cure the above-discussed deficiencies in Kim.

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Specifically, Hurwitt et al. does not disclose or suggest forming a backing plate with a bonding surface having a plurality of spaced-apart ridges that are disposed on and within the periphery of the bonding surface of the backing plate. Thus, for the foregoing reason withdrawal of this rejection is in order.

Entry of the foregoing, and prompt favorable action of the subject application on the merits are respectfully requested.

If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at his/her earliest convenience.

Respectfully submitted,



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